

# Core Eco Protocol

*Must also complete eco supplements for apple or stone fruit*

Deadlines for record submission

*Eco Stone Fruit: July 1, 2022*

*Eco Apple: July 22, 2022*

**2022 growing season v. 3.1 – 3/24/2022**

*See page 28 for list of revisions to this edition.*

**Changes to the 2022 protocols are highlighted in yellow**

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## Red Tomato Eco Programs

In partnership with farmers, scientists and other agricultural professionals, Red Tomato has developed this protocol to achieve measurable reductions in the use of high-toxicity pesticides. Through our work, we hope to contribute to a bountiful supply of quality, local foods with minimal pesticide residues, and to improve our soil and water resources, wildlife biodiversity, farmworker safety, farm stability and farmland preservation in the Northeastern USA.

Our protocol is based on a reduced-risk program developed by researchers, consultants and growers, and generally follows guidelines for Integrated Production by the International Organization for Biological and Integrated Control of Noxious Animals and Plants (IOBC).

Practices contained in this protocol are considerably more expensive than conventional programs that rely on highly toxic pesticides. Our project works to incorporate economic incentives for farmers to adopt reduced-risk methods. We recognize that reducing toxicity is an ongoing process. Our goal is to improve continuously as we learn more about reduced-risk alternatives and what it takes to implement them *and* grow high-quality apples.

Red Tomato is a nonprofit organization that helps family farmers survive and thrive by connecting them to customers who want high-quality produce, by developing new markets and managing all the logistics and promotion needed to ensure success in a supermarket environment and educating trade buyers and consumers to appreciate and seek out products that are ecologically grown by family farmers.

## Roles and procedures

**Red Tomato** is the lead organization responsible for market approach and overseeing use of Red Tomato trademarks. Red Tomato also maintains ownership of the certification protocol. Decisions on program procedures and market approach will be made in concert with researchers, crop consultants, growers and others. Annually, Red Tomato and its partners will review and evaluate the *Core Eco Protocol* and project and make adjustments where needed to continue to achieve our goals.

**The IPM Institute of North America**, an independent non-profit organization, is responsible for maintenance of certification standards making final decisions on standards and approval of certification status to determine eligibility for use of Red Tomato trademarks. The Institute will coordinate inspection by third-party IPM professionals, review materials submitted by growers and inspectors, and make final determination on certification approvals.

**Third-party auditors or the IPM Institute** will contract directly with growers to provide an on-site inspection. This inspection verifies compliance with the standard and has a special emphasis on evaluating compliance to criteria that are not measurable through documentation and records submitted to the IPM Institute. The on-site audit will still include a review of these items as per auditing guidelines.

**Participating growers** will be evaluated based on practices implemented which meet the *Core Eco Protocol*. A current version of the *Core Eco Protocol*, crop supplements and Quick Guide is always available at [ipminstitute.org/ecoapple.htm](http://ipminstitute.org/ecoapple.htm).

To apply for and maintain certification; the following steps will be followed:

1. Complete this *Core Eco Protocol* and Eco crop supplement (apples or stone fruits). Growers certifying multiple crops only need to complete the *Core Eco Protocol* once. Submit completed assessments to the IPM Institute with required:
  - a. Scouting records, trap counts and weather data. Scouting records must include date, block(s), pest and result, e.g., captures per trap, mites per leaf, etc.
  - b. Pesticide, fertilizer, thinner and plant-growth regulator application records to the IPM Institute. Application records must be submitted electronically and include at least the date and time application started and ended, crop, block(s), acreage, trade name and formulation of material applied (with EPA registration number, active ingredient, target pest for pesticides and duration of Restricted-Entry Interval), rate per acre (oz., gal. or lb./acre), application method, air temperature, average wind speed and direction during application. Record keeping can be improved by using an electronic record-keeping spreadsheet, such as those offered by Penn State ([Penn State Spray Record-Keeping Spreadsheet](#)) or Cornell University ([TracApple](#)).
2. If these are not received by the posted date, the IPM Institute will assess late fees for each week certification materials are late. Note: The IPM Institute of North America maintains confidentiality of all grower records which include, but are not limited to: *Core Eco Protocol*, crop supplements, pest-monitoring records, weather data, and pesticide, fertilizer, thinner and plant-growth regulator application records.
3. The Institute will appoint an inspector during the first year of certification and every third year thereafter. The inspector will verify the information provided during an on-site audit and will be scheduled prior to marketing of certified fruit. Growers will be invoiced by the IPM Institute for the on-site audit and is separate from the annual fee paid for certification.

### **Provisions for emergencies**

Contact the IPM Institute immediately at the earliest indication that an emergency is developing that cannot be managed without violating the certification standards. The IPM Institute will investigate the concern and if necessary, consult with scientific advisors to aid in assessment of the problem and determine if an exception to the protocol is justified.

Participants may expect the following support from the IPM Institute and project advisors regarding handling requests in emergency situations:

1. IPM Institute will confirm receipt of requests for protocol exceptions within one business day.
2. A response to the request with proposed options and resolution will be completed within one to three business days. This time is needed to allow the IPM Institute to contact scientists and project advisors and investigate appropriate solutions.
3. Requests for a protocol exception after a violation has occurred will not be considered.

## Removal of blocks from Eco Programs

All blocks enrolled in Red Tomato Eco Programs should be listed on the Field/Block List on page seven and eight of the *Core Eco Protocol*. These should be submitted with certification materials on the due date listed for the crop. This information is used during desk and on-farm audits and only certified blocks will be listed on eco certificates.

If a situation arises that requires a block to be removed from the program and occurs after certification materials have been submitted, please contact the IPM Institute and Red Tomato immediately and provide the following information:

1. The block name, variety and acreage being removed from the program.
2. The reason for removal from the program, e.g., crop loss due to weather, poor crop quality, application of prohibited pesticide.
3. If the reason for block removal was due to an application of a prohibited pesticide or violation of the pesticide-use restrictions, please provide the product trade name, active ingredient and formulation, application rate, variety and acres treated.

What you can expect from IPM Institute and Red Tomato:

1. The IPM Institute will follow up to confirm blocks that should be removed and discuss and address any questions or concerns relating to the block removal.
2. The IPM Institute will issue an updated certificate to the grower and Red Tomato.
3. Red Tomato will follow up with any questions and guidance relating to the use of Red Tomato eco trademarks and confirm/determine if any fruit from the removed block has entered the supply chain.

## Protocol scoring and practice verification

Guidelines for evaluating protocol practices for growers and auditors are outlined at the beginning of each protocol section. The following outlines what growers should expect when a protocol non-compliance has been identified:

- Minimum Requirements minor non-compliance: A minimum requirement that has not been fully implemented or scored as a “Fail” and does not threaten the integrity of the Red Tomato Eco Trademarks. The grower will be notified of the non-compliance in their audit report and no corrective action is required during that certification year. If the same minor non-compliance is identified in subsequent years, the auditor or IPM Institute may recommend withholding certification until the non-compliance is corrected.
- Minimum requirements major non-compliance: A minimum requirement that has not been fully implemented or scored as a “Fail” and whereby allowing certification and use of Red Tomato Eco Trademarks threatens the integrity of the Eco Program. The grower will be notified in writing and verbally and given the opportunity to correct the non-compliance during the certification year. Certification will be withheld until the non-compliance is addressed. If the major non-compliance cannot be corrected, no certification will be awarded.
- Pesticide use restrictions minor non-compliance: A violation of a pesticide-use restriction for any pesticide listed as “Use with Restrictions”. The grower will be notified of the non-

compliance in their audit report and verbally. Corrective action is required for any planned pesticide applications that remain during that certification year. If non-compliance is not corrected, the auditor or IPM Institute may recommend withholding certification.

- Pesticide use restrictions major non-compliance: If a prohibited or “Do Not Use” listed pesticide is applied, no certification may be awarded for the blocks that received the treatment of the prohibited pesticide.
- Advanced practices: No points will be awarded to advanced practices that are scored by the grower and found to not be fully implemented during on-farm or desk audits. If the grower is interested in receiving credit for this advanced practice, they are encouraged to contact the IPM Institute to discuss what additional criteria must be met to receive credit during the certification year.

## Core Eco Protocol Cover Sheet

Grower name: \_\_\_\_\_

Business name: \_\_\_\_\_

Physical address: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Cell phone: ( ) \_\_\_\_\_

Email address: \_\_\_\_\_

Website: \_\_\_\_\_

**Field/Block List.** Print additional pages if enrolling more than twelve fields or blocks. List blocks covered by the *Core Eco Protocol* below. Blocks with the same management practices (that will earn same scores throughout this assessment) can be grouped together as one block. Attach additional pages if needed to list all blocks. **Important:** If differences in the way individual blocks are managed impacts a response on this Core protocol, they should be listed as separate blocks. For example, if apple maggot is controlled by trapping in only one block, list and score that block as a separate block.

1. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

2. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

3. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

4. Crop: \_\_\_\_\_ Block name (s): \_\_\_\_\_

cultivars: \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

**Field Block List**

5. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

6. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

7. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

8. Crop: \_\_\_\_\_ Block name (s): \_\_\_\_\_

cultivars: \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

9. Crop: \_\_\_\_\_ Block name(s): \_\_\_\_\_

cultivar(s): \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

10. Crop: \_\_\_\_\_ Block name (s): \_\_\_\_\_

cultivars: \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

11. Crop: \_\_\_\_\_ Block name (s): \_\_\_\_\_

cultivars: \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

12. Crop: \_\_\_\_\_ Block name (s): \_\_\_\_\_

cultivars: \_\_\_\_\_

acres and estimated annual production (bu.): \_\_\_\_\_

## Core Eco Protocol

1. Operations and Management	
Audit guidance: Grower can describe how their organizational structure, record keeping, communication practices, and continuous-improvement efforts facilitate successful Eco Fruit production.	
A. Minimum Requirements	Pass, Fail or N/A
1. Please select all of the following audits or inspections that occurred on your farm from third parties, the state or federal government: a) Good Agricultural Practices (GAP) b) Food Safety (non-GAP) c) Worker Housing d) Occupational Safety and Health Administration (OSHA) e) Worker Protection Standard (WPS) f) Other(s) (Please list):	
2. Are all applicable local, state, and national laws, codes and regulations met which govern all aspects of applications of pesticides, nutrients, amendments, irrigation and other inputs? <sup>S</sup>	
3. Pesticides no longer used or no longer registered for use are returned to dealer or disposed of at the next collection. While in storage, obsolete pesticides are clearly marked and separated from pesticides in current use. <sup>S</sup>	
4. Grower has attended one or more educational meetings within the last year. <sup>D</sup> List meetings:	
5. Application records include at least the <b>date</b> and <b>time application started and ended, crop, block(s), acreage, product name</b> and formulation of material applied (with <b>EPA registration number, active ingredient</b> , target pest for pesticides and <b>duration of Restricted-Entry Interval</b> ), rate per acre, application method, air temperature, wind speed and direction. <sup>D</sup>  Note: Items highlighted in bold are required by the US EPA Worker Protection Standards for Agriculture. Each bold item not included in the record will count as one major non-compliance. Items not in bold and not included in the record will each count as one minor non-compliance. For more information visit: <a href="http://pesticideresources.org/wps/hosted/quickrefguide.pdf">http://pesticideresources.org/wps/hosted/quickrefguide.pdf</a> .	
6. Grower belongs to state and/or regional grower organization(s), in addition to participation in Red Tomato programs. <sup>D</sup> List organizations:	
7. Only fruit of sound internal and external quality are labeled and sold under Red Tomato trademarks. <sup>S</sup>	
8. Clean toilet and hand-washing facilities are available to field, harvest and packing house staff. <sup>S</sup>  Note: Soap must be available at all hand-washing facilities. Hand sanitizer may also be present but may not be used as a substitute for soap.	

<b>Operations and Management (Continued)</b>		
<b>B. Advanced Practices</b>	<b>Points eligible</b>	<b>Points earned</b>
1. Pesticide costs per acre are documented for all applications. <sup>D</sup>	1	
2. Workers handling or applying pesticides receive an annual medical examination or physical to ensure fitness for job duties. <sup>S</sup>  Note: Acceptable documentation includes a list of workers who participated in a medical exam. Workers and physicians must sign off documenting the exam occurred. Individual exam records do not need to be kept on file or shared in accordance with HIPAA privacy rules.	2	
3. Grower has hosted a field day or other production-related educational meeting within the last three years. <sup>D</sup> List date and name/description of event(s):	3	
4. Grower has conducted on-farm research using control (untreated) trees for comparison within the last three years. Describe each experiment, its purpose and dates. <sup>D</sup> Attach additional pages if necessary:	4	
5. Orchard is represented on 50% or more of the monthly Eco Apple conference calls.	1	
6. Cider production facility (if any) has a written HACCP plan. <sup>S</sup>	2	
7. Packing facility has a written Standard Sanitary Operating Procedures plan. <sup>S</sup>  Note: May be required by USDA for farms with packing facilities.	2	
8. Packing line water flumes are chlorinated or otherwise treated to reduce potential for post-harvest diseases. <sup>S</sup>	1	
9. Farm is third-party certified for USDA Good Agricultural Practices (GAP) or similar Global Food Safety Initiative recognized food safety scheme, e.g., GLOBAL G.A.P., PrimusGFS. <sup>S</sup>	3	
10. Farm has a written Food Safety Plan which meets either USDA GAP, GLOBAL G.A.P., or PrimusGFS. <sup>S</sup>  Note: Basic food safety requirements to meet FSMA or GAP certification. Provide a plan or other verification that basic food safety practices are being met.	2	
<b>Operations and Management: Total points eligible</b>	21	
<b>Total points earned</b>		

Superscripts indicate practice-verification process. Reference the following throughout entire document:

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>S</sup> Verified during site audit

## 2. Ecosystem and Water Conservation

Audit guidance: The grower can explain their rationale for implementing practices which maintain and improve soil health, monitor/regulate irrigation, monitor tree health, and minimize or mitigate soil erosion, by describing the observed benefits, and how the practice is implemented and maintained.

A. Minimum Requirements			Pass, Fail or N/A	
<p>1. Results from soil and/or foliar analyses are used to calculate nutrient application rates, minimize excess nutrient use and limit potential for nutrient pollution. Timing of any applications is consistent with available Extension or University guidelines. <sup>S</sup></p> <p>Note: Soil testing results are available for inspection and is completed at least once every three years and includes soil organic matter, pH, nitrogen, phosphorous, potassium, calcium and magnesium.</p>				
<p>2. Visibly eroded areas are not present and corrected in a timely manner, if they occur. Please select all erosion mitigation strategies that are implemented: <sup>S</sup></p> <p>A. Culvert(s)            B. Water diversion            C. Retention pond(s)            D. Other(s) (Please list):</p> <p>Note: Applicable to all enrolled acres, including adjoining roads and farmstead.</p>				
<p>3. A vegetated buffer separates surface water from edge of crop by at least 60 feet. <sup>S</sup></p>				
<p>4. Pesticide mixing is at least 120 feet from well heads. <sup>S</sup></p> <p>Note: Some states may require pesticide mixing to be further than 120 feet from well heads.</p>				
B. Advanced Practices Note: Please list block ID, for any blocks not earning points.		Points eligible	Points earned (all blocks)	Blocks not scored
<p>1. No irrigation is used. <sup>S</sup></p> <p>Note: If earning this point, skip to question 9 below. Do not enter points for questions 2-8.</p>		1		
<p>2. If irrigation is used, drip or trickle is installed to ensure adequate water supply and minimize water use and foliage wetness. <sup>S</sup></p>		1		
<p>3. If irrigation is used, automated shutoff devices are used. <sup>S</sup></p>		1		
<p>4. If overhead irrigation is used, applications are timed to minimize risk of spreading plant pathogens. <sup>S</sup></p> <p>Note: Overhead irrigation may be used for frost protection.</p>		1		
<p>5. Irrigation is determined by crop need, using systematic and science-based measures, e.g., monitoring soil moisture and visual assessment of plant stress. <sup>S</sup></p> <p>Note: Monitoring data from NEWA or on-farm weather station are available for inspection. Grower can describe the decision-making processes for determining when and where irrigation is necessary.</p>		1		

## 2. Ecosystem and Water Conservation (Continued)

<b>B. Advanced Practices</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned</b>	<b>Blocks not scored</b>
6. Rainwater or snowmelt is captured through retention ponds or keylines for irrigation. <sup>S</sup>	1		
7. Irrigation use efficiency is calculated. <sup>S</sup>	2		
8. Tile drainage is installed and maintained in poorly drained soils, or trees are not planted in poorly drained soils. <sup>S</sup>	2		
9. A water conservation plan is in place which addresses water uses for irrigation, washing and cooling. The plan should also outline staff training on minimizing water use in farm activities and practices and/or uses of technology to increase use efficiency. <sup>S</sup>  Note: Water conservation plan is available for site auditor to review.	3		
10. Rows are planted along contours on slopes with high risk for erosion, e.g., slopes greater than 10% or hydrologic soil classes with high-erosion potential. <sup>S</sup>	1		
11. On non-paved roads where erosion occurs, water bars are installed to reduce erosion. <sup>S</sup>  Note: Grower can describe how often water bars are maintained and where they are located.	1		
12. On sites at risk of wind-eroded soil, windbreaks are installed and maintained. <sup>S</sup>	1		
13. An NRCS IPM Conservation Activity Plan (activity code 114 or 154) for the farm has been developed or implemented (activity code 595), to identify and reduce environmental and human health risks, and improve crop yield and quality. <sup>S</sup>  Note: Additional information is available online from NRCS, <a href="https://nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/?cid=nrcseprd1354058">nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/?cid=nrcseprd1354058</a>	3		
<b>Ecosystem, Soil and Water Conservation: Total points eligible</b>	19		
<b>Total points earned</b>			

Superscripts indicate practice-verification process. Reference the following throughout entire document:

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>S</sup> Verified during site audit

**Note:** List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 23.

### 3. Pesticide-Risk Reduction

Audit guidance: The grower can explain potential sources of pesticide risk on the farm and how non-chemical practices, cultural/horticultural practices, pest-management decisions and pesticide-application methods are implemented and maintained to minimize pesticide risk.

A. Minimum Requirements	Pass, Fail or N/A
<p>1. Plant and tree canopies are maintained to allow penetration of light, air and spray material using pruning or plant growth regulators, e.g., Apogee (prohexadione calcium).<sup>S</sup></p>	
<p>2. Pesticide and nutrient application equipment is calibrated at least annually. Records are maintained and include name of person completing calibration, date of calibration, equipment description and procedures, results and adjustments from calibration.<sup>D</sup></p> <p>Calibration for airblast sprayer:  <a href="http://extension.psu.edu/sprayer-calibration-information">extension.psu.edu/sprayer-calibration-information</a>  <a href="http://sprayers101.com/airblast-output">sprayers101.com/airblast-output</a>  <a href="http://sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator">sprayers101.com/how-to-calibrate-an-airblast-sprayer-operator</a></p> <p>Calibration for boom sprayer:  <a href="http://extension.colostate.edu/docs/pubs/farmmgmt/05003.pdf">extension.colostate.edu/docs/pubs/farmmgmt/05003.pdf</a></p> <p>Calibration for rotary spreader:  <a href="http://pesticidestewardship.org/calibration/Pages/RotarySpreader.aspx">pesticidestewardship.org/calibration/Pages/RotarySpreader.aspx</a></p> <p>Calibration for a drop spreader:  <a href="http://pesticidestewardship.org/homeowner/how-to-calibrate-a-drop-spreader">pesticidestewardship.org/homeowner/how-to-calibrate-a-drop-spreader</a></p> <p>Note: Where rented equipment is used, follow supplied instructions for operation. Tractor ground speed needs to be calibrated if travel speed influences application rate.</p> <p>Mark with 'Yes' if rented sprayers or spreaders are used: _____.</p>	
<p>3. Pesticide drift is minimized by monitoring current wind direction and speed using (Please select all that apply)<sup>S</sup>:</p> <ul style="list-style-type: none"> <li>A. Hand-held monitor</li> <li>B. Weather station</li> <li>C. Online resources with real time wind-speed data</li> </ul> <p>Pesticide drift resources: <a href="http://pesticidestewardship.org/drift/Pages/default.aspx">pesticidestewardship.org/drift/Pages/default.aspx</a></p>	
<p>4. If grain-based rodenticides (corn, oats) are used, they are applied in bait stations or burrows only.<sup>D</sup></p> <p>Note: Rodenticide applications are included on spray records and include date and blocks treated. Including a rate per acre is not necessary.</p>	

### 3. Pesticide-Risk Reduction (Continued)

<b>B. Advanced Practices</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned (all blocks)</b>	<b>Blocks not scored</b>
1. Lower-risk pesticides are identified and used based on outcome from the Pesticide Risk Tool pesticide risk analysis. <sup>S</sup>  Note: Grower can describe what high-risk pesticide was used the previous season and what lower-risk pesticide replaced the application.	1		
2. A full-block application is replaced by a partial-block pesticide application. <sup>D</sup>  Note: One point per application may be scored for a maximum of two points.  Note: Partial blocks may be documented by listing acres treated compared to total acres of block, e.g., 6/10 acres treated or listing varieties treated.	1 or 2		
3. A full-block pesticide application is replaced by an application to block perimeter. <sup>D</sup>  Note: One point per application may be scored for a maximum of two points.  Note: Spray records clearly identify which perimeter of a block was treated.  Note: Perimeter sprays include both sides of a tree row up to the first four rows or up to 50 feet from the orchard edge. Applications to perimeter rows meet label restrictions on number of applications to the crop and total amount of active ingredient applied.	1 or 2		
4. A full-block pesticide application is replaced by an alternate-row-middle (ARM) application. <sup>D</sup>  Note: One point per application may be scored for a maximum of two points.  Note: Indicate on spray record when an ARM application is made.  Note: Additional ARM sprays should target opposite row from previous treatment. ARM sprays may count as half of one application. Pesticide records must document which rows were treated. For considerations on ARM sprays visit, <a href="http://sprayers101.com/alternate-row-middle-spraying">sprayers101.com/alternate-row-middle-spraying</a> .	1 or 2		
5. No organophosphates are used as insecticides. <sup>D</sup>	1		
6. No synthetic pyrethroids are used as insecticides. <sup>D</sup>	1		
7. Tractor cabs plus required personal protective equipment are used to protect applicators during pesticide applications. <sup>S</sup>	2		
8. No 'DANGER' labeled pesticides are used. <sup>D</sup>	1		
9. No 'WARNING' labeled pesticides are used. <sup>D</sup>	1		

### 3. Pesticide-Risk Reduction (Continued)

<b>B. Advanced Practices</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned</b>	<b>Blocks not scored</b>
10. Herbicides are not used in alleyways/drive rows. <sup>D</sup>	1		
11. Spray pattern for pesticide application equipment is evaluated and adjusted by assessing droplet size and coverage using water-sensitive cards or dyes, <a href="http://sprayers101.com/confirm-coverage-with-water-sensitive-paper">sprayers101.com/confirm-coverage-with-water-sensitive-paper</a> . <sup>S</sup>  Note: Results are available for review, including changes made to the sprayer or canopy management, as a result of the test.	2		
12. Spray-control system is used to regulate pesticide application rates. <sup>S</sup>	1		
13. A pre-harvest damage assessment is completed on all Eco blocks prior to the start of harvest. <sup>S</sup>  Note: A pre-harvest damage assessment is a sampling of a known quantity of fruit from each block. Each incidence of pest injury is documented and is used to make improvements in management the following season. A pre-harvest damage assessment can provide a more accurate representation of percent injury compared to a pack-out report that may be skewed if pickers are not harvesting damaged or low-quality fruit.	1		
14. On-site Network for Environment and Weather Applications (NEWA) station is used for pest and disease management, <a href="http://newa.cornell.edu">newa.cornell.edu</a> . <sup>D</sup>	3		
<b>Pesticide-Risk Reduction: Total points eligible</b>	21		
<b>Total points earned</b>			

Superscripts indicate practice-verification process. Reference the following throughout entire document:

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>S</sup> Verified during site audit

**Note:** List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 23.

#### 4. Pollinator Protection

Audit guidance: The grower understands and can describe the impacts of pesticide exposure and habitat loss on pollinator health; the benefits of pollinator-habitat conservation; practices which mitigate pesticide exposure and other practices which support healthy and abundant pollinator populations and relate this understanding to how the practices are implemented and maintained.

A. Minimum Requirements	Pass, Fail or N/A		
<p>1. Wild pollinator habitats (nesting and forage sites) are identified and protected from drift. <sup>s</sup></p> <p>Note: Maintain ground nesting sites (sunny, well drained, undisturbed patches of ground near forage sites).</p> <p>Grower must be able to show or describe the pollinator habitat location. Generate map documenting protected areas on farm. Pollinator habitat assessed twice- once during planning process and again after plan has been implemented.</p> <p>The Xerces Society recommends pollinator habitat should be, at a minimum, 125 feet from crops treated with neonicotinoids and 60 feet from all pesticides applied with an airblast sprayer, <a href="https://xerces.org/sites/default/files/2019-10/16-024_01_XercesSoc_Guidance-to-Protect-Habitat-from-Pesticides_web.pdf">https://xerces.org/sites/default/files/2019-10/16-024_01_XercesSoc_Guidance-to-Protect-Habitat-from-Pesticides_web.pdf</a></p>			
<p>2. Pesticides with an EPA pollinator toxicity advisory box on the label are not applied between pink and end of crop bloom, <a href="https://pesticidestewardship.org/wp-content/uploads/sites/4/2016/07/bee-label-info-graphic.pdf">pesticidestewardship.org/wp-content/uploads/sites/4/2016/07/bee-label-info-graphic.pdf</a>. <sup>D</sup></p> <p>Note: For information on how to reduce bee poisoning, <a href="https://www.oregon.gov/ODA/shared/Documents/Publications/PesticidesPARC/PollinatorProtection.pdf">Extension,https://www.oregon.gov/ODA/shared/Documents/Publications/PesticidesPARC/PollinatorProtection.pdf</a></p> <p>Best management practices to protect pollinators, <a href="https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators">https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators</a>.</p>			
B. Advanced Practices Note: Please list block ID, for any blocks not earning points.	Points eligible	Points earned (all blocks)	Blocks not scored
<p>1. Non-blooming buffers of ≥ 60 feet are maintained around all field borders where pesticides toxic to pollinators are applied. <sup>s</sup></p> <p>Note: Buffers prone to collecting pesticide drift are mowed to eliminate bloom in ground cover prior to pesticide application toxic to pollinators.</p>	1		
<p>2. If managed beehives reside on the farm year-round, they are monitored for health, their diseases are controlled and documentation of monitoring is available for review, e.g., date and description of monitoring activities. <sup>s</sup></p> <p>Note: Regular, seasonal inspection and treatment of hives for Varroa mites and disease with accompanied documentation.</p>	2		

<b>4. Pollinator Protection (continued)</b>			
<b>B. Advanced Practices (continued)</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned (all blocks)</b>	<b>Blocks not scored</b>
<p>3. Established pollinator forage habitat which provides season-long bloom is available for managed and wild pollinators.</p> <p>Converted acreage to native pollinator habitats:</p> <ul style="list-style-type: none"> <li>– One to five acres designated pollinator habitat: two points</li> <li>– Each additional designated habitat totaling block of five acres: one point.</li> <li>– Maximum of four points may be scored for a total of 15 acres designated to pollinator habitat.</li> </ul> <p>Note: Managed pollinator habitat includes a blend of native flowering plant species that offer a continuous bloom throughout the growing season, ideally providing at least three blooming species at any time.</p> <p>Note: Establishing a diverse pollinator habitat on designated land around installed solar panels could be included in acreage counted.</p>	2 – 4		
<p>4. Honeybee apiaries resident on the farm are located at least 0.5 mile away from designated wildlife habitat, e.g., state or national wildlife refuges, natural areas or parks. <sup>S</sup></p> <p>Note: Lowered risk of disease transmission from domestic to native pollinators/bees.</p>	2		
<p>5. Commercially produced bumblebee hives are not used for open pollination. <sup>S</sup></p>	1		
<p>6. Pollination is accomplished exclusively with native bees. <sup>S</sup></p>	2		
<p>7. Pollinator activity is monitored during bloom through participation in the Northeast Pollinator Partnership, <a href="http://northeastpollinatorpartnership.org/">northeastpollinatorpartnership.org/</a>.<sup>S</sup></p> <p>Note: Application provides the farmer with a tool to document and create a baseline understanding of pollinators present in their orchard. This baseline is a tool to measure whether the practices being implemented are generating the results and improvements the orchard is looking for.</p>	1		
<p>8. Blooming ground cover in the drive row is reduced to protect pollinators from drift using non-chemical strategies.</p> <p>Note: Growers should be able to describe the location and how often or what conditions would trigger mowing, e.g., is it timed before or after sprays, etc.</p>	1		

#### 4. Pollinator Protection (Continued)

B. Advanced Practices	Points Eligible	Points earned (all blocks)	Blocks not scored
<p>9. Nesting habitat for wild pollinators is created and managed throughout the growing season.</p> <p>Note: Wild bee housing placed in and around forage and pollination target areas. Housing can include not removing dead trees (when it's safe to do so), presence of hollowed out reeds/stems of bushes or erecting bee housing.</p> <p>Establishing a diverse pollinator habitat on designated land around installed solar panels could be included in acreage counted.</p>	1		
<p>10. Ongoing education: Grower has attended a training on pollinator conservation (ie., pollinator habitat, importance of native pollinators, etc.)</p>	1		
<b>Pollinator Protection: Total points eligible</b>	16		
<b>Total points earned</b>			

Note: List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 2.5. 5.

#### 5. Orchard Floor Management

Audit guidance: The grower can explain their rationale for implementing cultural/horticultural practices which minimize excess herbicide use; describe how insect and disease management is improved through orchard floor management; and describe their integrated approach to weed management which best suits the site and weed pressure on the farm.

A. Minimum Requirements	Pass, Fail or N/A
<p>1. To suppress insect pest and disease inoculum, pruning debris remaining in the field is (Please select all that apply) <sup>S</sup>:</p> <ul style="list-style-type: none"> <li>A. Flail chopped</li> <li>B. Mowed</li> <li>C. Removed</li> </ul>	
<p>2. Weed-free areas in planting rows do not extend into the row middles or aisles. <sup>S</sup></p>	
<p>3. Herbicide mode of action is rotated between each application (during and between seasons). <sup>D</sup></p> <p>Note: Back-to-back applications of herbicides with the same mode of action may be applied if tank-mixed with another herbicide with a different mode of action, where consistent with Extension recommendations and label restrictions.</p>	

5. Orchard Floor Management (Continued)			
A. Minimum Requirements		Pass, Fail or N/A	
4. No more than three applications of an herbicide are made per season to the same application site. A fourth spot-treatment may be made if desired control is not achieved and must be supported with documentation which identifies weed species not controlled during previous applications. <sup>D</sup>			
5. Row middles or aisles (drive rows) are (Please select all that apply) <sup>S</sup> : A. Sod B. Mulch covered C. Cover cropped year-round.			
B. Advanced Practices Note: Please list block ID, for any blocks not earning points.		Points eligible	Points earned (all blocks)
1. Weeds targeted with herbicide applications are scouted at least once per season and weed species present and location, e.g., tree row or row middle, are documented. <sup>D</sup>		1	
2. Invasive weeds attractive to pollinators are removed from orchard and field borders <sup>S</sup> .		1	
3. Herbicides are not used in planted rows; weeds are managed by the following non-chemical method(s) (Please select all that apply) <sup>D</sup> : A. Cultivation B. Aeration C. Over-seeding D. Avoiding compaction.  Note: Practice receives the same number of points regardless of how many practices are selected.		1	
4. Groundcover is managed to eliminate alternate hosts for plant bugs, e.g., winter-annual weeds, chickweeds, dandelion, clovers, vetch and other legumes. <sup>S</sup>		1	
5. Alternate-row mowing is done to preserve beneficials. Please describe when this practice is implemented: <sup>S</sup>		1	
<b>Orchard Floor Management: Total points eligible</b>		5	
<b>Total points earned</b>			

Superscripts indicate practice-verification process. Reference the following throughout entire document:

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>S</sup> Verified during site audit

**Note:** List the block ID for any instances where the scored advanced practice does not apply to the site. Total points for each block may be reflected in the final score card on page 23.

## 6. Soil Health Management

Audit guidance: The grower can explain their rationale for implementing practices which build soil health; describe how soil health is improved from the practices.

A. Minimum Requirements	Pass, Fail or N/A												
<p>1. Results from soil and/or foliar analyses are used to calculate nutrient application rates, minimize excess nutrient use and limit potential for nutrient pollution. Timing of any applications is consistent with available Extension or University guidelines. <sup>s</sup></p> <p>Note: Soil testing results are available for inspection and is completed at least once every three years and includes soil organic matter, pH, nitrogen, phosphorous, potassium, calcium and magnesium.</p>													
<p>2. One advanced indicator of soil health is quantitatively assessed once every three years: <sup>s, D</sup></p> <p>(Check all that were completed)</p> <table border="0" data-bbox="126 751 998 934"> <tr> <td><input type="checkbox"/> Aggregate stability <sup>1,2</sup></td> <td><input type="checkbox"/> Micronutrients <sup>1</sup></td> </tr> <tr> <td><input type="checkbox"/> Available water capacity <sup>1</sup></td> <td><input type="checkbox"/> Soil compaction <sup>1,2</sup></td> </tr> <tr> <td><input type="checkbox"/> Bulk density <sup>2</sup></td> <td><input type="checkbox"/> Soil food web <sup>3</sup></td> </tr> <tr> <td><input type="checkbox"/> Earthworm count <sup>2</sup></td> <td><input type="checkbox"/> Soil nitrates<sup>2</sup></td> </tr> <tr> <td><input type="checkbox"/> Infiltration rate <sup>2</sup></td> <td></td> </tr> </table> <p><sup>1</sup> The USDA-NRCS Soil Quality Test Kit Guide describes procedures and an interpretive section for each test, <a href="https://nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2_053873">nrcs.usda.gov/wps/portal/nrcs/detail/soils/health/assessment/?cid=nrcs142p2_053873</a>.</p> <p><sup>2</sup> Available with the Cornell Comprehensive Assessment of Soil Health - Standard Soil Health Analysis Package, <a href="https://soilhealth.cals.cornell.edu/testing-services/comprehensive-soil-health-assessment/">soilhealth.cals.cornell.edu/testing-services/comprehensive-soil-health-assessment/</a>.</p> <p><sup>3</sup> Testing available at Harrington's Organic Land Care, <a href="http://harringtonsorganic.com/organic-land-care-services-hartford-county-connecticut/soil-testing/#lightbox/1/">http://harringtonsorganic.com/organic-land-care-services-hartford-county-connecticut/soil-testing/#lightbox/1/</a>.</p> <p>Note: Test results are available for review during site audit.</p>	<input type="checkbox"/> Aggregate stability <sup>1,2</sup>	<input type="checkbox"/> Micronutrients <sup>1</sup>	<input type="checkbox"/> Available water capacity <sup>1</sup>	<input type="checkbox"/> Soil compaction <sup>1,2</sup>	<input type="checkbox"/> Bulk density <sup>2</sup>	<input type="checkbox"/> Soil food web <sup>3</sup>	<input type="checkbox"/> Earthworm count <sup>2</sup>	<input type="checkbox"/> Soil nitrates <sup>2</sup>	<input type="checkbox"/> Infiltration rate <sup>2</sup>				
<input type="checkbox"/> Aggregate stability <sup>1,2</sup>	<input type="checkbox"/> Micronutrients <sup>1</sup>												
<input type="checkbox"/> Available water capacity <sup>1</sup>	<input type="checkbox"/> Soil compaction <sup>1,2</sup>												
<input type="checkbox"/> Bulk density <sup>2</sup>	<input type="checkbox"/> Soil food web <sup>3</sup>												
<input type="checkbox"/> Earthworm count <sup>2</sup>	<input type="checkbox"/> Soil nitrates <sup>2</sup>												
<input type="checkbox"/> Infiltration rate <sup>2</sup>													
B. Advanced Practices Note: Please list block ID, for any blocks not earning points.	Points eligible	Points earned	Block Not Scored										
1. Additional advanced indicators of soil health are measured at least once every three years.	1												
2. Compost is used to supplement or replace commercial fertilizer in non-bearing and/or bearing orchards.	1												
3. During orchard renovation, keylines are installed to improve infiltration, aeration, retain water and breakup compaction, while minimizing disturbances to the blocks soil structure.	2												

## 6. Soil Health Management (Continued)

<b>B. Advanced Practices</b> <b>Note: Please list block ID, for any blocks not earning points.</b>	<b>Points eligible</b>	<b>Points earned</b>	<b>Block Not Scored</b>
<p><b>4. Practices are implemented to improve soil health based on results identified in advanced soil health indicators and then soil health indicator is retested after three years.</b></p> <p>In one sentence please identify the practice and blocks practice is implemented on:</p> <p>During an on-farm audit, the grower should be able to:</p> <ul style="list-style-type: none"> <li>• Describe the soil-health concern and identify which indicator was used to measure soil health.</li> <li>• Describe the practice that was implemented, maintenance needs and frequency of maintenance.</li> <li>• Clearly identify location of blocks covered in the practice (Maps are not required but helpful).</li> <li>• Results of initial assessment of soil health indicator and results after third year of practice implementation are available for review during on-farm audit.</li> <li>• Notes, photos, receipts of purchases, etc. showing implementation of practice are available for review during on-farm audit.</li> </ul>	<b>3</b>		
<p><b>5. Farm has a policy which guides staff on how to mitigate the risk of soil compaction from vehicle or implement use.</b></p> <p>Policy could include, but not limited to the following:</p> <ul style="list-style-type: none"> <li>• Instruct employees to stay on gravel drive roads or limit travel in orchard to specific rows during wet periods.</li> <li>• Staff are directed to avoid use of certain equipment or implements during wet periods.</li> <li>• Staff are instructed to park vehicles in a specific location and walk to worksite during wet periods.</li> <li>• Tires on vehicles, tractors, UTVs and trailers driven through the orchard are upgraded to taller and wider sizes that will minimize compaction.</li> </ul>	<b>1</b>		
<p><b>6. A mulching program is in place and mulch is renewed as needed to build soil health and suppress weeds.</b></p> <p>Points for mulching systems:</p> <ul style="list-style-type: none"> <li>• One to ten acres: 3 points.</li> <li>• Each additional block of five acres, 0.5 points may be scored and up to a maximum of 1.5 additional points, which equals an additional 15 acres.</li> <li>• Practice longevity is estimated at three years per application of mulch.</li> </ul>	<b>3 – 4.5</b>		

## 6. Soil Health Management (Continued)

B. Advanced Practices Note: Please list block ID, for any blocks not earning points.	Points eligible	Points earned	Block Not Scored
<p>7. During orchard renovation, cover crops are used to maintain groundcover prior to orchard establishment.</p> <p>Note: Cover crops should be maintained and where necessary, replanted to keep a living root in the soil during the growing season.</p> <p>Note: Consult with local Extension or USDA-NRCS guidelines to determine appropriate cover crops for soil type and climatic conditions.</p>	1		
<b>Soil Health Management Total Points Eligible</b>	<b>13.5</b>		
<b>Total Points Earned</b>			

## 7. Energy and Waste Management

Audit guidance: The grower can describe how they manage energy consumption and waste generated, to reduce soil, water and air pollution; conserve energy; minimize waste to landfills and quantify energy use on the farm.

A. Minimum Requirements	Pass, Fail or N/A	
1. Pesticide containers (including paper), plastics, rubber or industrial products may not be disposed of by burning. <sup>S</sup>		
2. Buildings which are heated or cooled are insulated. <sup>S</sup>		
B. Advanced Practices	Points eligible	Points earned
<p>1. Energy-efficient lighting is used in office, packing and storage facilities, e.g., compact fluorescent or LED lighting. <sup>S</sup></p> <p>Note: Upgrade lighting fixtures, replace older lamps with LED or compact fluorescent bulbs, replace incandescent bulbs with compact fluorescent, install timers and motion detectors to ensure lights will turn off when not in use. Clean light fixtures frequently. <a href="https://farm-energy.extension.org/farm-lighting-energy-efficiency-checklist-and-tips/">https://farm-energy.extension.org/farm-lighting-energy-efficiency-checklist-and-tips/</a>.</p>	1	
<p>2. Solar or wind are used to meet any amount of on-farm electricity needs: Two points</p> <p>Where state incentives for solar are available, the farm has maximized their eligibility for total size of the installation: one additional point.</p>	2 – 3	

7. Energy and Waste Management (Continued)		
B. Advanced Practices	Points eligible	Points earned
3. Biodiesel or ethanol, are used to meet any amount of fuel needs. <sup>S</sup>	1	
4. New energy conservation measures have been implemented in storage facilities. <sup>D</sup> List:  Note: May claim for points during entire period of cost recovery on investment plus an additional three years.  Notes: On-site refrigeration system checklist- see quick guide. <a href="https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Production-ASP-Handouts.pdf">https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Production-ASP-Handouts.pdf</a>	1	
5. Employees are trained on how to minimize energy consumption for farm activities. <sup>S</sup>  Note: Outline of training content is available or signage around farm which encourages energy conservation is evident to serve as reminders for employees.	1	
6. Tractors and other motorized equipment are used efficiently and effectively to reduce overall fuel consumption, e.g., do not let diesel engines idle longer than 5-10 minutes; tractors are operated in economy mode when appropriate, e.g., spraying, mowing; tractors are maintained to maximize efficiency. <sup>S</sup>  Note: More information on this practice is explained in, "Farm Practices to Improve Energy Efficiency", University of Wisconsin Extension, <a href="https://farm-energy.extension.org/introduction-to-energy-efficiency-and-conservation-on-the-farm/">https://farm-energy.extension.org/introduction-to-energy-efficiency-and-conservation-on-the-farm/</a>	1	
7. A third-party energy audit of facilities has been completed within the last six years. <sup>S</sup>  <a href="https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Module-Overview.pdf">https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Module-Overview.pdf</a>	3	
8. The following materials are recycled: <sup>S</sup>		
a. Paper and cardboard	.25	
b. Plastic	.25	
c. Aluminum	.25	
d. Glass	.25	
e. Used pesticide containers where consistent with regulations	.25	
f. Batteries (excludes lead-acid batteries)	.25	
g. Computers and other recyclable office equipment	.25	
9. Energy use efficiency is monitored using the Stewardship Index for Specialty Crops, <a href="https://www.stewardshipindex.org/files/ugd/917763_c357f742461a43dc8fddd850349ech06.pdf">https://www.stewardshipindex.org/files/ugd/917763_c357f742461a43dc8fddd850349ech06.pdf</a> <sup>S</sup>	3	

<b>7. Energy and Waste Management (Continued)</b>		
<b>B. Advanced Practices</b>	<b>Points eligible</b>	<b>Points earned</b>
10. A pesticide mixing and loading facility is used to catch and retain pesticide rinsate. <sup>§</sup>	3	
<b>11. Cover crops are established prior to contracted solar panel installation to reduce erosion and soil compaction.</b>  Note: Planting and establishing a cover crop at site of future solar panel installation to help mitigate soil erosion and compaction.  See pollinator protections advanced practices (4.B.3 and 4.B.9) for establishing pollinator habitat under installed panels.	1	
<b>Energy and Waste Management: Total points eligible</b>	<b>19.75</b>	
<b>Total points earned</b>		

Superscripts indicate practice-verification process. Reference the following throughout entire document:

<sup>D</sup> Verified during desk audit via submitted paperwork

<sup>§</sup> Verified during site audit

<b>Score Card</b>														
<b>Points Required</b>				<b>Points Eligible</b>	<b>Points Earned per Block</b>									
Years of Participation	Core Eco Protocol	Apple Supplement	Stone Fruit Supplement		Print additional pages of score card if more than ten blocks are enrolled.									
1-3 years	25	4	3		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
> 3 years	30	8	6											
<b>CORE ECO PROTOCOL</b>														
<b>Operations and Management</b>				21										
<b>Ecosystems, Soil and Water Conservation</b>				19										
<b>Pesticide-Risk Reduction</b>				21										
<b>Pollinator Protection</b>				16										
<b>Orchard Floor Management</b>				5										
<b>Soil Health Management</b>				13.5										
<b>Energy and Waste Management</b>				19.75										
<b>Total-Points Possible</b>				<b>115.25</b>										
<b>Total Points Earned</b>														
<b>ECO CROP SUPPLEMENTS</b>														
<b>Eco Apple</b>				57										
<b>Eco Stone Fruit</b>				26										
<b>Total Points Earned</b>														

## Participating Grower Affidavit and Agreement

1. Participating grower certifies that the attached *Core Eco Protocol* and records represents a complete and accurate account of grower practices on acres to be certified at the time the *Core Eco Protocol* is completed and reviewed by the inspector and the IPM Institute for the purposes of certifying participating production.
2. Participating grower agrees to allow access to farm and records for scheduled and unannounced inspections to verify compliance with program requirements including information provided on the *Core Eco Protocol* and use of Red Tomato trademarked packaging and promotional materials.
3. Participating grower agrees that eco certification is approved solely by the IPM Institute of North America, Inc. and if granted, is for one season only and only for product from participating production units reported in this *Core Eco Protocol* and certified by the IPM Institute.
4. Participating grower agrees not to market any product under Red Tomato eco trademarks, including use of Red Tomato eco packaging or other Red Tomato eco promotional materials or identification, until eco certification for the product is approved in writing by the IPM Institute. Participant further agrees that if certification is not approved, no product will be marketed under the Red Tomato eco trademarks and no eco packaging or promotional materials bearing Red Tomato eco trademarks will be used. Participant agrees to bear any costs associated with denial of certification including the cost of Red Tomato eco trademark packaging and promotional materials purchased by the grower.
5. Participating grower acknowledges that participation does not constitute or imply an endorsement by the IPM Institute of North America or Red Tomato of the participating grower or operation.

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Participating Grower Name

Signature

Date

## Submission Checklist

- \_\_\_ a. Completed Eco Core Protocol
- \_\_\_ b. Completed Eco crop supplements
- \_\_\_ c. Pesticide, fertilizer, thinner and plant-growth regulator application records for blocks to be certified. See page 4 for required information.

The IPM Institute can digitize spray records not submitted in an electronic format. This service will be charged based on an hourly rate for time required for digitization and a final copy of the electronic record will be sent to the grower.

- \_\_\_ d. Scouting records for blocks to be certified. See page 4 for required information.
- \_\_\_ e. Certification fee. The annual-certification fee is based on the total number of acres enrolled in the program and does not cover costs of on-site audits required every three years. Fees for on-site audits are payable directly to the auditor.

0 – 9 acres	\$475
10 – 24 acres	\$600
25 – 49 acres	\$750
50 – 99 acres	\$850
100 – 149 acres	\$1,075
150 – 199 acres	\$1,300
200 – 299 acres	\$1,625
≥ 300 acres	\$2,150

\*Additional fee of \$100 when enrolling in Eco Stone Fruit and Eco Apple.

## Deadlines for Record Submission

- a. Eco Stone Fruit: **July 1, 2022**
- b. Eco Apple: **July 23, 2022**

## Fees

Annual certification fee \$\_\_\_\_\_ with the 2022 Eco Core Protocol, pesticide application and scouting records are due by the posted date. Final application and scouting records are due by **December 2, 2022**. Payment is accepted by check or credit card. To pay by credit card please visit our secure website, [ipminstitute.org/projects/northeast-eco-apple/online-payment/](http://ipminstitute.org/projects/northeast-eco-apple/online-payment/), or call 608 232-1410.

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## Revisions to 2022 Edition

### Operations Management Minimum Requirements

Moved from Food Safety and Product Quality (Note: This section has been removed from the protocol)

- Page 9: 1.A.7. Only fruit of sound internal and external quality are labeled and sold under Red Tomato trademarks.
- Page 10: 1.A.8. Clean toilet and hand-washing facilities are available to field, harvest and packing house staff.

### Advanced Practices

- Page 10: 1.B.6. Cider production facility (if any) has a written HACCP plan.
- Page 10: 1.B.7. Packing facility has a written Standard Sanitary Operating Procedures plan.
- Page 10: 1.B.8. Packing line water flumes are chlorinated or otherwise treated to reduce potential for post-harvest diseases.
- Page 10: 1.B.9 Farm is third-party certified for USDA Good Agricultural Practices (GAP) or similar Global Food Safety Initiative recognized food safety scheme, e.g., GLOBAL G.A.P., PrimusGFS. S
- Page 10: 1.B.10. Farm has a written Food Safety Plan which meets either USDA GAP, GLOBAL G.A.P., or PrimusGFS.

### Ecosystem and Water Conversation (removed Soil)

#### Minimum requirements

- Page 11: 2.A.3. A vegetated buffer separates surface water from edge of crop by at least 60 feet.

### Pollinator Protection

#### Minimum Requirements

- Page 16: 4.A.1 Wild pollinator habitats (nesting and forage sites) are identified and protected from drift. <sup>s</sup>

#### Advanced Practices

- Page 17: 4.B.3. Established pollinator forage habitat which provides season-long bloom is available for managed and wild pollinators.
- Page 17: 4.B.8. Blooming ground cover in the drive rows is reduced to protect pollinators from drift using non-chemical strategies.
- Page 18: 4.B.9. Nesting habitat for wild pollinators is created and managed throughout the growing season.
- Page 18: 4.B.10 Ongoing education: Grower has attended a training on pollinator conservation (ie., pollinator habitat, importance of native pollinators, etc.)

### Soil Health Management (New Section)

#### Minimum Requirements

- Page 20. 6.A.2. One advanced indicator of soil health is quantitatively assessed once every three years.

#### Advanced Practices

- Page 20. 6.B.1. Additional advanced indicators of soil health are measured at least once every three years.

- Page 20. 6.B.2. Compost is used to supplement or replace commercial fertilizer in non-bearing and/or bearing orchards.
- Page 20. 6.B.3. During orchard renovation, keylines are installed to improve infiltration, aeration, retain water and breakup compaction, while minimizing disturbances to the blocks soil structure.
- Page 21. 6.B.4. Practices are implemented to improve soil health based on results identified in advanced soil health indicators and then soil health indicator is retested after three years.
- Page 21. 6.B.5. Farm has a policy which guides staff on how to mitigate the risk of soil compaction from vehicle or implement use.
- Page 21. 6.B.6. A mulching program is in place and mulch is renewed as needed to build soil health and suppress weeds.
- Page 22. 6.B.7. During orchard renovation, cover crops are used to maintain groundcover prior to orchard establishment.

### **Orchard Floor Management**

Page 20: Moved practice 5.B.6. from Orchard Management- Foraging pollinators are protected by reducing blooming groundcover and broadleaf weeds using mowing or herbicide applications which target drive rows and row middles to 4.B.8 Protecting Pollinators- Blooming ground cover in the drive rows is reduced to protect pollinators from drift using non-chemical strategies.

### **Energy and Waste Management**

- Page 22. 7.A.1. Pesticide containers (including paper), plastics, rubber or industrial products may not be disposed of by burning.
- Page 22 7.B.1. Note: Upgrade lighting fixtures, replace older lamps with LED or compact fluorescent bulbs, replace incandescent bulbs with compact fluorescent, install timers and motion detectors to ensure lights will turn off when not in use. Clean light fixtures frequently.
- Page 22. 7.B.2. Solar or wind are used to meet any amount of on-farm electricity needs: Two points. Where state incentives for solar are available, the farm has maximized their eligibility for total size of the installation: one additional point.
- Page 23: 7.B.4. Notes: On-site refrigeration system checklist- see quick guide. <https://farm-energy.extension.org/wp-content/uploads/2019/04/Tree-Fruit-Production-ASP-Handouts.pdf>
- Page 23: 7.B.6. Tractors and other motorized equipment are used efficiently and effectively to reduce overall fuel consumption, e.g., do not let diesel engines idle longer than 5-10 minutes; tractors are operated in economy mode when appropriate, e.g., spraying, mowing; tractors are maintained to maximize efficiency. S
- Tractor maintenance practices consolidates from 7.B.6-8 to 7.B.6.
- Page 23: 4.B.11 Cover crops are established prior to contracted solar panel installation to reduce erosion and soil compaction.

**Total Points Possible in the Core Eco Protocol increased from 108.75 to 115.25 points.**

## Acknowledgements and References

Contributing growers, scientists and other advisors to the development of the Red Tomato Eco Apple Protocol and Grower Self-Assessment are thanked for their previous work, which has been incorporated into this new *Core Eco Protocol*.

Art Agnello, Extension entomologist, Cornell University  
Juliet Carroll, Extension fruit IPM coordinator and plant pathologist, Cornell University  
Aaron Clark, Clark Brothers Orchards  
Dan Cooley, plant pathologist, UMass  
Sue Futrell, communications director, Red Tomato  
Rob Koch, Apple Leaf, crop consultant  
Kerik Cox, Extension plant pathologist, Cornell University  
Greg Krawczyk, Extension entomologist, Penn State University  
Barney Hodges Sr., Barney Hodges Jr., Christiana Hodges and Dee Hodges, Sunrise Orchards  
Tracy Leskey, research entomologist, USDA ARS  
Mary Concklin, Associate Extension Educator - Fruit Production & IPM, University of Connecticut  
Richard Cowles, Valley Laboratory, Connecticut Agricultural Experiment Station  
John Lyman, Lyman Orchards  
Harvey Reissig, Extension entomologist, Cornell University (retired)  
John Rogers and Greg Parzych, Rogers Orchards  
Michael Rozyne, Evangelist and founder, Red Tomato  
Peter Ten Eyck, Indian Ladder Farms  
Arthur Tuttle, Extension IPM field leader, plant pathology  
Jon Clements, Extension educator, UMass

The following funders have supported this work:

US EPA Strategic Agricultural Initiative, Region I  
USDA NIFA Northeastern IPM Center  
USDA NRCS Conservation Innovation Program  
USDA NIFA Crops at Risk Program  
W. K. Kellogg Foundation  
Whole Foods Market  
An anonymous foundation and many generous individuals

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